**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

Please amend the claims as follows:

1.-57. (Canceled)

58. (New) A method comprising:

searching a semiconductor device design to find a found carry chain, a logical function implemented with said found carry chain;

calculating a first propagation delay through said found carry chain;

splitting said found carry chain into two or more carry chains;

connecting said two or more carry chains in parallel to form a parallel carry chain having same inputs and outputs as said found carry chain;

calculating a second propagation delay through said parallel carry chain; and

modifying said semiconductor device design by replacing said found carry chain with said parallel carry chain if said second propagation delay is smaller than said first propagation delay.

59. (New) A method as in claim 58 wherein said semiconductor device design is an RTL netlist.

60. (New) A method as in claim 58 wherein said second propagation delay is no more than 50% of said first propagation delay.

61. (New) The method as in claim 58 further comprising searching said semiconductor device design to find a second found carry chain after said modifying.

62. (New) The method as in claim 58 wherein said logical function performs the function of an incrementer.

63. (New) The method as in claim 58 wherein said logical function performs a decoding function for a multiplexer within a multiplexer.

64. (New) A machine readable medium having stored thereon sequences of instructions which are executable by a digital processing system, and which, when executed by the digital processing system, cause the system to perform a method comprising:

searching a semiconductor device design to find a found carry chain, a logical function implemented with said found carry chain;

calculating a first propagation delay through said found carry chain;

splitting said found carry chain into two or more carry chains;

connecting said two or more carry chains in parallel to form a parallel carry chain having same inputs and outputs as said found carry chain;

calculating a second propagation delay through said parallel carry chain; and

modifying said semiconductor device design by replacing said found carry chain with said parallel carry chain if said second propagation delay is smaller than said first propagation delay.

65. (New) The machine readable medium of claim 64 wherein said semiconductor device design is an RTL netlist.

66. (New) The machine readable medium of claim 64 further comprising compiling a behavior level netlist to produce said RTL netlist.

67. (New) The machine readable medium of claim 64 further comprising searching said semiconductor device design to find a second found carry chain after said modifying.

68. (New) The machine readable medium of claim 64 wherein said logical function performs the function of an incrementer.

69. (New) The machine readable medium of claim 64 wherein said logical function performs a decoding function for a multiplexer within a multiplexer.